ELECTRICITY on the FARM

THE NATIONAL MAGAZINE OF RURAL ELECTRIFICATION

FEATURED THIS MONTH:

- War Lighting Economies
- Short Cuts in Silo Filling
- Barn Blackout Methods
- Shocks in Artificial Breeding
- Ve-Ag Boys Build Equipment
- Fans Help Produce Beef
- Mom in Dad's Pants
- Hot Lunch at School
- War Brides Pore and Grill
- Roosters for Mother's-in-Law

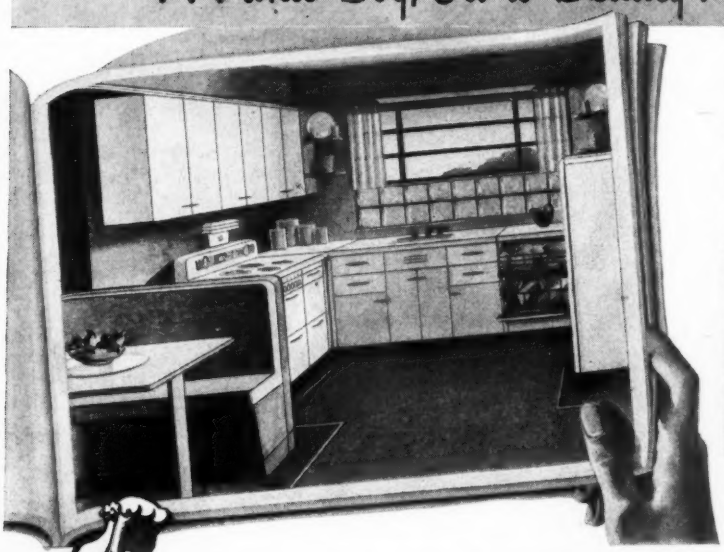
SEPTEMBER, 1942

A CASE – SHEPPERD – MANN PUBLICATION

Our New HOTPOINT ELECTRIC KITCHEN
Is Just Around the Corner...

Every dollar we spend for War Bonds gives us a great big thrill of satisfaction! We figure we're not helping win the war but hastening the day when we'll be able to own a really modern Hotpoint Electric Kitchen like the Johnsons'.

. . . and Boy, It's a Beauty!



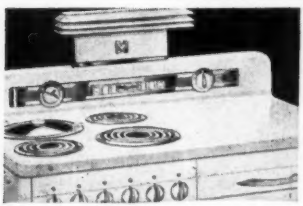
. . . AND BOY, IT'S A BEAUTY! We never realized that a handsome Hotpoint Electric Kitchen could be so practical for farm homes! And, best of all, it costs far less than we ever thought!

For a $6,000 home—The Colonial Farm Kitchen (left), complete with Hotpoint Range, Refrigerator, Electric Dishwasher, Sink and Hotpoint Steel Cabinets, costs so little many $6,000 homes enjoy them.

For a $4,000 home—The Sunset Farm Kitchen (above), typical of *thousands* installed in low-cost rural homes, is equipped with Hotpoint Range, Refrigerator, Sink and Steel Cabinets.

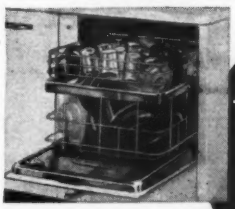
We'll All Enjoy These Wonderful Electric Appliances

- - BUY WAR BONDS TODAY — ELECTRIC KITCHENS TOMORROW - -



There'll be no more guesswork about my baking when I have a thrifty, accurate Hotpoint Electric Range. And cooking the electric way is certainly clean!

Foods will stay fresher far longer in my roomy Hotpoint Electric Refrigerator. That's a mighty important economy right there!



Even children can operate a Hotpoint Automatic Electric Dishwasher and Disposal. Dishes are washed clean—food wastes flushed away!

Hotpoint
ELECTRIC KITCHENS
★ ★ ★

Edison General Electric Appliance Co., Inc., 5610 West Taylor St., Chicago, Ill.

Editor's Chat

Fiddling

Nero fiddled while Rome burned.

Our world today is on fire with war. Our side, which we believe to be the side of right, is losing more and faster than we care to admit. We are told that winning depends on fast production of war materials.

The enemy has our rubber supply. Artificial rubber can be made from alcohol derived from sugar, corn or grain; or from crude oil. There are two processes of manufacturing rubber from crude oil. It is claimed that the Houdry process, the newer development, is cheaper, faster and will require less critical materials for plant construction. We need rubber from *all sources* and by *any process*. But political and commercial interests are involved between oil and agriculture, North and South, one school of thought and another. Some one may gain a commercial advantage. Japan has our former supply; Russia makes rubber from dandelions; Germany makes artificial rubber. We ration and fiddle.

The Government is worried about inflation. It would ruin us. We have price control. But the greatest contributing factor toward inflation is the enormously increased wages of labor in war production plants—wages, with overtime, of $10 to $25 per day to men who may never have earned more than $3 per day previously. They buy; commodities are scarce and prices trend upward. Farm labor and store labor must go up in competition with war labor; costs go up; prices must rise. Price increase is inflation; it just means our money buys less. A greater threat is to the nation's credit. Excessive wages and waste because of haste means enormous war costs—costs we cannot pay with taxes; so we borrow. Limited borrowing is good business; but when the debt becomes so great that people doubt the Government's ability to pay, then the promise to pay—our money—loses value, and we have inflation. Why are we paying labor up to $25 per day and soldiers of equal ability and courage less than $2, when we had been promised that in another war there would be an "M Day" when all capital and labor would be mobilized fairly for war? Politics, expediency, fiddling.

And, be careful, farm folks, that our own selfishness over prices does not help inflate the balloon to the bursting point and drop us all in a hole. Are we fiddling, too?

The War Labor Board is continuing to grant increases in union wages. It has saddled the steel industry with the closed shop and "check-off." Here's what the closed shop and "check off" would mean if there were a farm labor union. Organizers, whose purpose is to collect dues, talk a number of farm hands into joining a union by telling them how they are mistreated, and what long hours and poor pay they have. Some join. Then they bring pressure to bear on your hired man who is well paid and happy. He resists. Perhaps they get tough and beat him up. The Labor Board then tells him he *must* join the union and pay his dues regularly or you must fire him. That's the closed shop. To make it stick, they command you to deduct the dues from your hired man's wages each month and pay them to the union. That's the "check-off." In return the union boss cracks down on you for shorter hours and double time for Sunday milking. Why is it done? Votes, politics, lack of "guts," fiddling.

Mr. Petrillo, who gave up trying to get through the fourth grade when he was 14, became a saloonkeeper and is now dictator of music and musicians, sits at "the biggest damn desk" Marshall Field's had and walks on thick Oriental rugs. He is reputed to have seven bodyguards. His salary is $46,000. When Mr. Petrillo says: High School Band, don't broadcast, they don't broadcast. The radio networks don't dare permit it. When he says, Army Band, don't play, they don't play. And we are fighting for freedom? Fiddling?

There are still strikes in war plants; strikes for more wages and strikes over whether CIO or AF of L should collect the tribute. And we're fiddling.

Not everyone is fiddling. Farmers, despite shortage of labor, are producing above quota of war crops. The country is developing a large, well equipped army. Manufacturers have responded gratifyingly in war production. We have Fords and Kaisers who build planes and ships efficiently.

Agriculture must continue to work. It is *our* country, and we need workers, not fiddlers to win the war.

There is an election coming, and that is the time to let fiddlers and spineless, favor-grabbing sanctioners of fiddlers of all parties know they are not wanted.

George W. Kable

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FIRST
WIN THE WAR
America must win this war. The task is great. It demands total effort. Today and as long as needed our man-power, resources and facilities must be devoted to building those implements that will help bring victory. Let's win this war as quickly as possible - and completely!
AFTERWARDS
When complete victory has been won General Electric will again create and build those appliances that add so much to our American way of life.
IN THE MEANTIME
Take good care of the electric appliances you now own. If they should need repairs call your General Electric Dealer. He will help make what you now have last until we can again build the new things you will want.
GENERAL ELECTRIC

ASK YOUR GENERAL ELECTRIC DEALER for your copies of (1) "HOW TO GET THE MOST OUT OF THE FOOD YOU BUY." (2) "A CAPTAIN IN THE KITCHEN" (a handbook telling how to take care of your electric appliances). Or send 5¢ in stamps to cover cost of handling, to the General Electric Co., Bridgeport, Conn., Dept. EG-823-8.

War Lighting Economies

This Article Tells How to Improve Farm Lighting with the Expenditure of Very Little or No Money and Little If Any Additional Cost for Electricity. Simple Expedients for Doubling Your Light.

By **HELEN G. McKINLAY**
Home Lighting Specialist, General Electric Company, Nela Park, Cleveland, Ohio

Ten young eyes—with work to do—look at the world of today with clear vision.

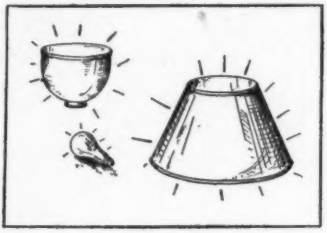
NO one is more aware nor more intimately conscious of the meaning of "conservation" than the farmer. Farmers have practiced it faithfully in numerous ways from time immemorial. Rags and scraps become rugs and quilts; feathers and duck down fulfill final destinies in pillows and comforts; and chicken-feed and flour bags rival many a newly purchased apron, undergarment or kitchen dish towel!

However, in the doing, more work is born. This year farmhouse production is geared in high and the tempo of all things has been accelerated. Today in this business of farming there will also be anticipation and preparation for the uncertainties ahead. The farmer is faced with larger harvests, bigger jobs—and fewer hands! Not much spare time despite the fact that war has pushed the clocks ahead to start the day earlier. Additional work makes it quite likely that longer evenings will result to complete the work begun so early in the morning.

Light will help. Light will help in every activity of the farmstead—especially before the dawn and when day is done. Light makes ALL seeing easier—whatever that "seeing" work is, whether it be at the sink, the stove, the worktable, or an eye to the sewing and knitting. Often there is fruit salvaged from the wind and rain that "won't keep till morning," or the berries are ripening so quickly that every minute counts if they are to be saved. Another job tonight!

When night falls families are gathered together the few hours before bedtime. Relaxation in the form of a book, perhaps, or youngsters at play, the promising musician at the piano—but inevitably the hand which does the sewing will continue to work, for there are jobs which challenge the fullness of the forthcoming day—and must be done NOW.

More work... eyes at work. Whatever the task, the job of seeing is constant — even at play the eyes are at work. While many eyes need help, all eyes will benefit by the assistance of the best lighting they can get! All work can be done more

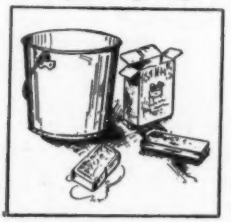


efficiently, more easily, more quickly and with less tension and strain when the lighting is beyond reproach. And here is good news for you. There are numerous ways in which lighting can be put to work to aid in "seeing" without additional expenditure of cash, without using more current, and without having to purchase new lamps and lighting equipment—provided, of course, the existing lamps have some of the desirable qualifications to make them eligible for enlistment! So let's see.

First, look to the lighting in each room in the farmhouse. This should be done in order of the importance and use of that room to the family. Next appraise the lighting in that room to see how it can serve most helpfully—and what can be done without cost to make it more effective—how you can place your lamps to serve more than one spot usefully. Then go about the business of checking them for their lighted behavior when measured against the following suggestions. They are made to help you get the most light for the current used.

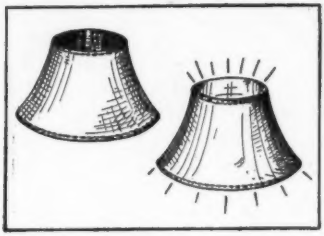
◀ By merely cleaning a lamp—wiping off the bulb with a damp cloth, washing the inner glass diffusing bowl with soap and water, and brushing or cleaning the shade—*Half Again as Much Light* may be had. The kitchen enclosing globe, or the glass shades on wall brackets are frequently offenders in stealing light in this manner. Moisture from boiling kettles aids and abets in depositing sticky layers of dirt which waste light.

▼ Not just lighting fixtures

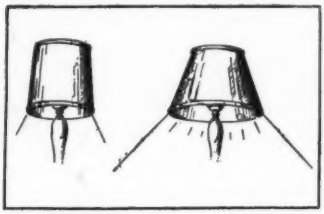


and lamps, but also dusty and dirty walls and ceilings or those dark in color, will reduce light as much as *One Quarter in Amount*. Recapture the light by cleaning these soiled surfaces.

A fresh paint job will work wonders in this regard, too. Particularly noticeable and quickly amenable to such attention are rooms light in color. White ceilings pay light dividends well worth the effort of freshening with paint, or washing with water.



▲ Lamp shades which are white or light on the inside can reward the user with *Twice As Much Light* compared with dark lined lamp shades. So look about, select the lightest shades in your home, put them to work for you and thus help to avoid waste.

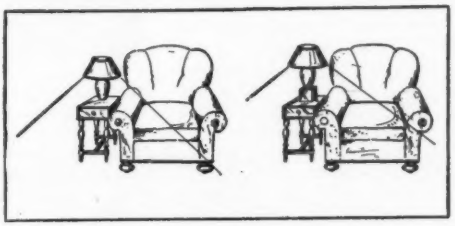


▲ Lamp shades with straight sides also reduce useful lighting beneath to a surprising extent. The more flaring shades spread light generously over wider areas and frequently *More Than Double the Usable Light.*

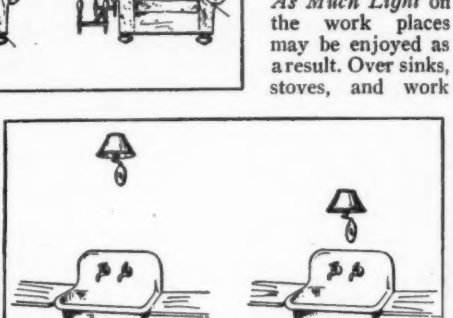
▶ Place lamps to serve *More Than One Piece of Furniture* and arrange a room for unity of light and sight—the lamps placed wherever close and critical seeing is done. Frequently with planning, one lamp may provide lighting for more than one spot in the room.

Lighting is a helpful tool which can aid with farm labors. Since the crusade against waste brings no new lesson to farm people, they should see the wisdom of conserving strength and energy by using lighting effectively and efficiently.

▼ Squat lamps also limit the useful light. Where lamps are less than 12 inches in height, the base of the lamp should be raised by a wood block or something on which the lamp can be securely placed. As much as *Ten Times the Light* can actually result!



Don't hang pin-to-wall lamps ▼ too high. If you want to get *more* light, place them close to the work. Often by moving a pin-to-wall lamp as little as 12 inches *Twice As Much Light* on the work places may be enjoyed as a result. Over sinks, stoves, and work tables, close lighting helps make the work easier.



Fly Screen in Barn Door

This fly electrocutor is installed in the upper half of the barn door on Calvin Reuthinger farm on Oregon Road, Toledo, Ohio. It permits ventilation of the barn and stops a lot of flies permanently. Take care of the screens you have by turning off the current occasionally and giving the screens and insulators and the wires and transformers a good cleaning. See that the screen frames are in good condition and the wire grids of the screens straight and not close enough to cause current leakage in wet weather.

The Cover

This is a study in electric propriety. It is Mrs. Jenkin's sewing room. She is making a slip cover (?) for a chair (or maybe herself). But, note that adjustable pin-to-wall lamp with diffusing bowl that can be raised or lowered over the sewing machine; and behind her is a 30-gallon electric water heater in white enamel finish, clean and not displeasing in any sewing room.

—I'm proud I am a farmer!—

Some Short Cuts in Silo Filling

Four Men Fill 17 x 40 Silo While Working a 400 Acre Farm and Milking 44 Cows. Two Men Harvest with Aid of Remodeled Corn Binder. One Fills Silo with 5 Horsepower Motor Driven Cutter and One is in Silo.

By **RALPH J. BUGBEE**
Agricultural Engineer, Central Vermont Pub. Serv. Corp., Rutland, Vermont

WHEN a regular crew of four men does all the work on a 400-acre farm handling 100 acres of tillage land, including 30 acres of corn, 20 acres of potatoes, and a few acres of various cash crops, and has to milk 44 cows twice a day, you may know that you have a well managed and efficient business. The one exception to the 4-man crew is at potato harvesting time. The regular crew does the corn harvesting between chores and has put in as high as 33 loads averaging over 1½ tons per load in one day. This is how it is done on the Elmer Montgomery Farm in Braintree, Vt.

The silo is home made from lumber cut and prepared on the farm and is 8 sided with a 17 foot inside diameter and 40 feet to the top stave. It is 46 feet from the cutter table to the top of the distributor pipe, which is quite a lift. The cutter is an old one that has had a new fly wheel in the 24 years of its life as its major repair, proving that the average farm machine doesn't wear out as fast as it rusts out. It pays to take care of tools.

Changes Harvesting Equipment

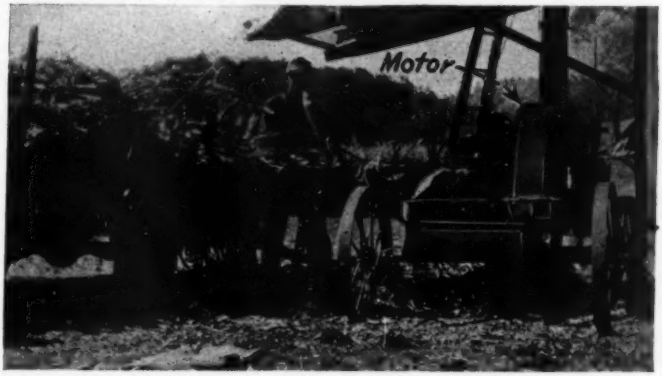
The interesting part of the system of harvesting is the 3 two-wheel trailers, the off-set boom on the crawler type tractor, and the change in the corn harvester.

First, Mr. Montgomery removed the bundle-throwing arms from the harvester which is drawn by the tractor, and made a platform on which a man could stand. Then he made an off-set boom that was bolted to the tractor so that a trailer could be hitched to it with the center of the trailer opposite the man on the harvester platform. With this equipment two men have harvested all of the corn on an average 30 acres for 4 years without picking a bundle from the ground, and leaving as clean a field as you would wish to see. When a trailer is loaded it is drawn to the cutter at the silo by a small tractor, and an empty trailer is picked up and taken back to the field. It takes three trailers to work to the best advantage. The field men take turns on the platform as that is a job for a real "he" man.

One man at the cutter is able to unload the trailer and feed the cutter and keep ahead of the field men without difficulty. The fourth man is in the silo.

The cutter is operated by a 5 hp electric motor which has liberated the heavy tractor for the field work and the light tractor has replaced horses for hauling.

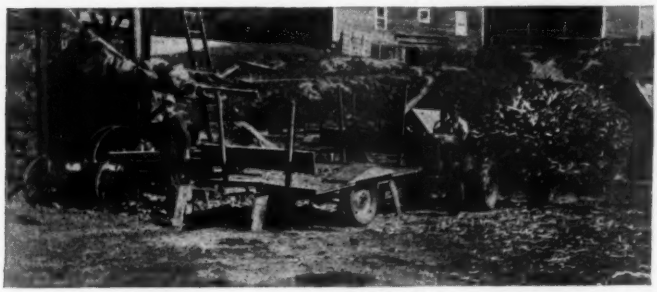
During the first years of operation of the motor, a long flat belt was used, but last year the motor was mounted on the cutter frame and a V-belt drive installed, consisting of a 6 inch 3 groove pulley on the motor, a 20 inch flat pulley on the cutter and 3 V-Belts. This gave much smoother operation and considerably more power. The cutter operates at 525 rpm. At this speed there is a minimum of wear and a maximum of safety for the opera-



One man with a 5 hp motor cuts all the ensilage. The motor is mounted on the cutter and drives it through triple V belts with a minimum loss of power. The man at the cutter unloads the trailer, feeds and cares for the cutter and keeps up with the two-man field crew. Note the canvas cover protecting the operator and machine.

Tractor pulling the remodelled cornbinder and trailer. Note the offset boom attached to the "Cat" which pulls the trailer alongside the harvester. The corn looks like Iowa, but the hill does not.

The man is standing on the improvised platform at the rear of the harvester from which he tosses the bundles on the trailer. The field men take turns at this job.



One trailer supported on a saw-horse has been unloaded. The man at the cutter pulls it ahead by hand while the new load is pulled up to the cutter table by the small tractor.

tor. The ability of the motor to take care of heavy overloads assures a constant speed. The operator says that when he once gets the "feel" of the machine he can feed it easily at a steady pace and put through an amazing amount of corn. About 12 minutes is the average time to put through a ton and a half load. Check meter tests have shown an actual consumption of 375 kw-hrs to fill the silo. On the rate available to Mr. Montgomery, this is a money cost of $7.50.

The filler pipe is run about half-way up the silo for the first filling and then put over the top for final filling. The top opening is 46 feet above the cutter table.

"David and Goliath"

When the motor was first delivered at the farm for its trial, it was unloaded right beside the big tractor which had up to then been used for belt power. The contrast in size was so marked that Mr. Montgomery's son Jenness, affectionately known as "Ike," a big husky hustler, told me to "take that toy up to the house and hitch it to Ma's sewing machine. It may run that." When it had been running an hour or so, he confessed that the drinks were on him and he made good.

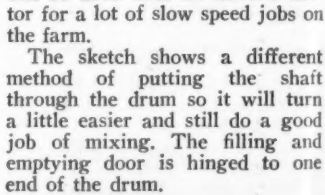
The active management of the Montgomery farm is now in Ike's hands. His younger brother Francis has been in the Army since last April, and this has broken up the regular team of father, two sons and one regular hired man. Wesley Rumney is the fourth man on this team and lives at farm No. 2, which adjoins the home farm.

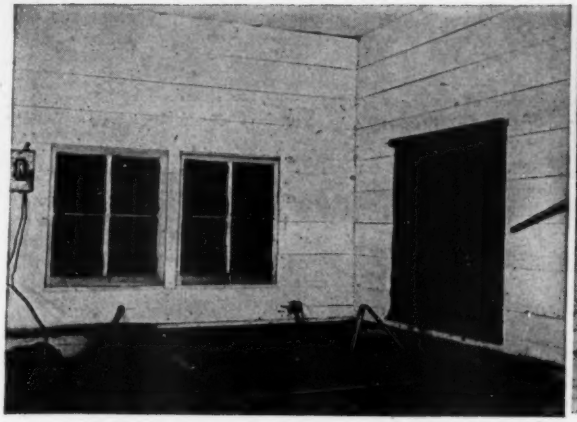
As Elmer says, "You know, Bugbee, it don't do any harm to be shown sometimes even when you don't believe a thing will work. You *can* be wrong." Mr. Montgomery's experience with a 5 hp motor has been duplicated in many instances in Vermont, and this fall thousands of tons of good silage will be all "cut-up" by electricity working for Vermont farmers.

Motor Drives Feed Mixer

This feed mixer, made out of an old oil drum, is on the Moll Breeding Farms at Wauseon, Ohio. It had been turned by hand for 15 years until Mr. Moll saw an illustration of a speed reducer in ELECTRICITY ON THE FARM last September. He made a reducer and since then has been mixing the feed with a small motor. Nearly every power driven washing machine has some sort of speed reducing mechanism on it. These may often be obtained from a junk dealer at a reasonable price and mounted so they can be used with an electric motor for a lot of slow speed jobs on the farm.

The sketch shows a different method of putting the shaft through the drum so it will turn a little easier and still do a good job of mixing. The filling and emptying door is hinged to one end of the drum.





Left: At right is a roller shade of blackout material used to cover a milkhouse window. The edges must be tacked or clipped down to keep light from getting under them. At left, the glass is painted with blackout paint. It should be put on the outside. **Right:** Blackout paint being applied to the inside of a ventilator hood used to admit air to the dairy barn without allowing light to escape. The opening at the bottom should be one foot deep.

Blackout Suggestions for Dairy Barns

By **B. H. STANDLEY**
Supervisor, Agricultural Department,
Houston Lighting & Power Company

EDITOR'S NOTE. *There has been considerable concern on the part of dairymen, poultrymen and agricultural engineers in how to comply with blackout regulations on farms. In Texas, the Agricultural College, some farmers and the Houston Power and Light Co. experimented with different methods until they found some that would be effective and practical. This article is based on the findings.*

BLACKING out dairy barns presents a problem which will vary with each individual dairy. Each dairyman must use those methods best suited to his farm. On small dairies it may be possible to suspend milking during a blackout and continue during daylight hours. This unexpected interruption in the milking schedule, however, will result in some loss in production.

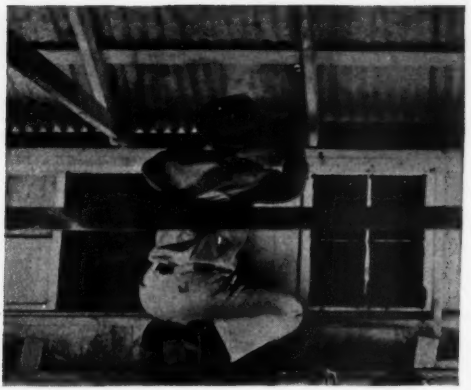
Almost all dairy barns can be fixed so they can continue milking during a blackout. The cost and work involved, in making the necessary changes to go into a blackout on a moment's notice will vary with the condition and size of buildings. At best it will be fairly expensive and require some work.

Before attacking the problem of blacking out dairies it might be well to keep three things in mind. First, that there is no such thing as a partial blackout. In blackout areas when the alarm is sounded the U. S. Interceptor Command requires that all lights must be cut off or the buildings must be fixed so the windows, doors, etc., can be closed to keep the light from being seen from the outside. Second, after the dairy barn has been blacked out it must be so done that both the cows and men will have plenty of ventilation; and third, that we do not try to work with too little light, thereby taking chances on improper sanitation.

Covering Cracks in Walls

Building paper, black or tan in color and of a type that consists

The Mrs. George Caldwalder dairy barn near Houston, completely equipped for blackout. The ventilator hoods extend a foot below the window openings.



Applying roofing paper under eaves to stop light. Window at right has two coats of blackout paint; the one on left is covered with a ventilating hood.

of two sheets of paper sealed together with asphalt and fiber between, is recommended. The rolls are 3 to 7 feet wide. This paper does not tear readily and will withstand heavy winds when properly installed.

For stopping large cracks, use lath, batten or strips of heavy tar roofing.

Roofing

Where corrugated iron is used the problem is stopping nail holes in the iron. This can be done with thick tar and will resist the weather.

Blacking Out Windows

Blackout Paint. Glass windows may be painted with blackout paint on the outside. Never use the paint on the inside as this will cause a mirror effect and give off reflected light that can be seen from the air. Flintkote blackout cloth may be laid on the paint to help strengthen the glass and lessen the danger of flying particles. Strips of adhesive tape placed criss cross inside the window panes will also give some protection against flying glass. Blackout paint costs approximately $2.00 per gallon.

Blackout Shades

On the windows in the milk house blackout shades of the roller type may be used. They should be installed above the window casing and allowed to overlap at the bottom when pulled down. Tabs for holding the shade close to the window casing come with the shades. Shades of this type cost from 50c to $1.50, depending on the size and weight.

Blackout Screens

Blackout screens made from ply board or similar materials, weather proofed and framed to prevent warping make an excellent light proofing method. This screen may be used to cover windows or window openings in either the dairy barn or the milk house. In both cases the screen should be mounted inside, preferable by using straps of leather fastened at the top. The straps permit the screen to be pushed out at the bottom, allowing the concussion to pass, in which case the operator can quickly place it back in position. Some dairymen find it very convenient to hook the lower edge of the screen to the ceiling when not in a blackout. The cost of building such a screen varies from approximately 50c to $1.00, depending on the type of material used.

Outside Hood

Outside hoods are used when it is desirable to blackout a window and still have some ventilation. A dairy barn with all windows closed would make it very difficult to milk cows because of lack of ventilation and extreme heat in the summer. A combination of blackout screens and hood ventilators with a hood placed over each third window will give adequate ventilation. The hood is triangular. It is fastened above the window, overlapping the bottom of the window at least one foot, with an opening one foot wide. Shiplap may be used to build the hood providing it is covered with tar roofing making it both light proof and weather proof. The inside of the hood should be painted dull black and the wall of the barn overlapped by the hood should also be painted black.

Covering Large Openings

For large openings that are not practical to cover with screens, a "roller blind" may be made from a tarpaulin or other similar light proof material. Considerable overlap is desirable in obscuring the light.

Cow coming into the barn through a light trap. These traps are tunnels which permit the cow to get out but not the light rays. The cow can go around corners but not the light. The tunnel should be painted dull black inside.

Doors

The average dairy will have three types of door problems. First, the door to the milk house. This door does not have to be opened when the light is on. The milker can enter the door, then close it and turn the light on to pour up the milk. Before returning to the dairy barn he can cut off the light before opening the door. The door may be made light proof by stripping the inside with heavy black paper.

The second door problem will be the entrance to the milking barn where it is not practical to cut off the lights upon entering and leaving because of other workers in the barn. In this case a light trap is recommended. It is so designed that persons may enter and leave the building during blackouts without any visible light emerging from the interior. The light trap is essentially a box shaped tunnel with walls and ceiling painted black to absorb the direct light, and so placed that no direct light can shine through the tunnel.

An inexpensive way to build such a light trap is to use strips of siding covered with tar paper supported with posts in the corners. The top can be made from the same material.

Some of the dairymen who have milk houses near the dairy barn may choose to build a light proof tunnel or passage between the two buildings instead of the light trap, thereby eliminating two outside doors or traps.

The third problem is fixing an entrance so the cows can go in and out of the barn with the lights on. This can be accomplished by building a large light trap similar to the one described for the men, but much larger. It is also advisable to place guide rails of 2"x10" material about two to three feet above the floor across the corners to help guide the cows through the trap. The inside walls should be painted black to absorb the reflected light.

Light Traps for Ventilators

A few barns and milk houses will have ventilators on the roof or in the ceiling. A baffle board painted black on the inside, overlapping the opening and suspended a short distance below will suffice if the light is not too strong and direct.

Blacking Out Barn Eaves and Gables

Several things can be used to stop the light from passing underneath the eaves and gables. Feed sacks rolled and stuffed in the openings between the plate and the roof works very well. Some dairymen prefer using cement mortar, while others use heavy tar paper tacked to the plate on the inside, allowing it to overlap the roof several inches.

Shading of Light

All lights should be shaded with deep reflectors so the direct rays do not strike the upper walls and ceiling. The reflectors should extend at least one inch below the bottom of the bulbs.

Testing the Job

The final test of a dairy blackout is to actually observe the buildings at night. With the lights on it will be easy to find the cracks that were overlooked and the light traps that were improperly installed.

Remember that a light that can not be seen will never guide a Jap or German.

Save by Using Electric Fence

This is Willard Datt and Melvin Copeland of Slippery Rock, Pa., high school. The boys won a State prize at the 1942 Pennsylvania Farm Show as a top notch vocational agriculture demonstration team. The demonstration was on the installation and use of safe electric fences. The boys explained the construction of an approved fence controller, told where and how to use electric fences and gave a summary of farmer experiences with electric fences in their own Slippery Rock community. Fourty-four percent of the farms in that community use electric fences.

The picture of the boys and chart is from the camera of B. P. Hess of Westinghouse taken at a recent rural electrification conference at Pennsylvania State College. The chart gives comparative costs per acre and per rod of 47" woven wire fence, 4-strand barbed wire and electric fence. For small areas, the electric fence costs most because of the investment in the controller. For ten acres or more, the electric fence is very much the cheapest, costing only a fraction of the other types for fencing 50 acres or more.

The labor force of the U. S.—all people who work for cash or its equivalent—number 52,840,762, according to the last Census. The average is about one and one-half workers per family. The average family consists of 3.8 persons.

Electric Stimulation for Artificial Insemination

By GEORGE H. DACY

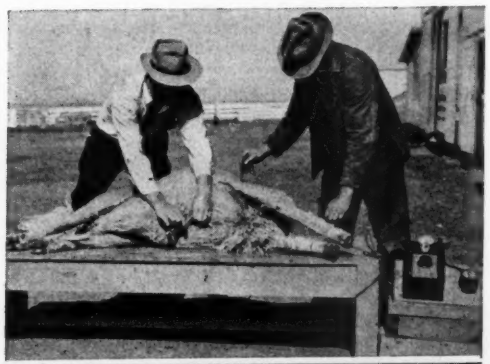
AT the U. S. Sheep Experiment Station, Dubois, Idaho, electrical stimulation has been used very effectively in artificial breeding of western range ewes. The procedure followed is not new; the technique was developed by Mr. R. M. C. Gunn, of the University of Sydney, Australia. In field practice the system has worked as well on the American range sheep as it previously did "away down under" in Australia.

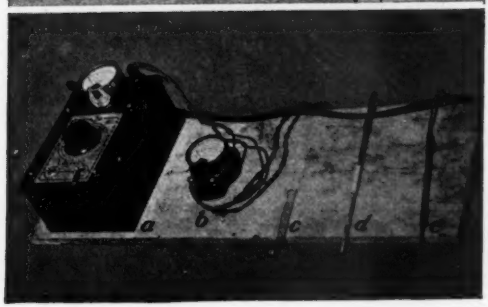
Electrical stimulation is employed in the collection of semen from rams which are too wild or too young to be used in natural matings; it also works extremely well in the case of old or crippled flockheaders. The apparatus used at the U. S. Sheep Experiment Station included a small transformer of about 2 amperes' capacity, a voltmeter and milliammeter, and two electrodes soldered to insulated wire leads. If alternating current is used it must be transformed to voltages ranging from about 10 volts by fives to 40 volts.

In lieu of alternating current, that from batteries of suitable voltages may be employed, although such current must be passed through a small interrupter and reverser.

The electrode for insertion in the rectum of the ram is a smooth wire of the diameter of an ordinary lead pencil; the other electrode consists of a flattened wire with a surface area of approximately one-fourth inch in diameter. In his Australian tests Gunn used a strong needle as the number two electrode, it being inserted in the longissimus dorsi muscle.

Upper: Electrical equipment being used for collecting semen from a ram. Note ammeter and voltmeter at right on table about 2 feet above ground. **Lower:** Apparatus used for the collection of semen by electrical stimulation at the United States Sheep Experiment Station, Dubois, Idaho. The parts shown are (a) voltmeter; (b) ammeter; (c) collecting tube; (d) and (e) electrodes.





At the Dubois sheep ranch the flattened electrode was applied lightly to the moistened surface of the skin near the fourth lumbar vertebra. It is essential that both electrodes be well insulated at the point of soldering to the insulated wire leads in order to protect the attendant who holds them in position from receiving a shock.

The ram's forelegs are tied together and so placed that they are slanting forward; the hind legs are secured in similar way and extended backwards. The head is also placed in a stretched-out, comfortable position. The long electrode is inserted in the rectum of the ram; the other electrode is held firmly against the moist skin of the animal as noted above. A series of 10 to 20 stimulations at 30 volts is then applied, with the current on for 5 seconds and then off for a similar period. Stimulations vary in number according to the quantity of semen desired.

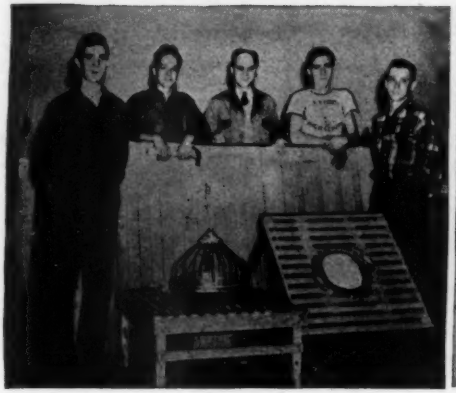
Variation in Rams

Where this method of collection is properly practiced it may be repeated on the same ram at daily intervals, or every second day, without deleterious effects. Considerable variation is apparent between different rams in the number of stimuli required for adequate semen collection. The semen in each case is collected in a glass test tube. Artificial breeding of the ewes occurs as soon as possible after collection of the semen. Where a number of ewes are to be bred they are assembled in a pen close by. The inseminations are made with an ordinary syringe.

The U. S. Department of Agriculture has successfully transported ram semen from Moscow, Idaho, to the Beltsville, Maryland, Research Center, a distance of 2,600 miles as well as from Moscow to Dubois, Idaho, about 700 miles, in iced vacuum bottles by air express and has obtained 10 percent pregnancies where the semen was no older than 115 hours when used. The results however indicate that a better technique for the storage of the semen was needed. Under current conditions the practical use of ram semen is limited to an age of about one day. Thus far the method of semen extraction by electrical stimulation has been confined to the use of state and federal experimentors.

Artificial insemination is of remarkable potentiality in expanding the use of valuable male foxes. Electrical stimulation has proved the best technique as yet developed for the collection of

. . . . . (More on page 24)



Left: Two of the electric water warmers for chickens and part of the shop class. Water is kept from freezing with a 75 watt bulb which is directly under water container. Shown from left to right are: Elvin Rowland, Fred Tredway, Amos Meyer, Instructor, Richard Mohler, and Gerald Eicher. **Center:** Showing student with aid of instructor installing an electric pig brooder in a hog house. The brooder is fastened down with screen door hooks and may be removed when it is not needed. **Right:** A litter of pigs leaving the portable pig brooder as the mother called them for dinner. This type of brooder may be used in a central farrowing house, barn, or shed where sows may farrow.

Lyons, VO-AG Department Makes Electric Equipment

Chick, Pig and Lamb Brooders and Water Warmers Bring Good Returns to Farm Boys

By **AMOS MEYER**
Vocational Agriculture Instructor, Lyons, Ohio

EVERY boy in a Vocational Agriculture class as well as his parents have many timely problems to solve. As soon as cold weather appears they want to know of a way to keep the water for the laying flock from freezing. The baby chick season creates a brooding problem which the owner wants to take care of as economically and easily as possible. During the lambing and farrowing season many of the new born animals need artificial heat.

Generally speaking, every good Future Farmer and adult is eager to get ahead.

When school started last September the boys in the Lyons Vo-Ag Department got busy making the necessary electrical equipment they needed for their projects. Knowing the boys and their problems it was a pleasant task for me, with the assistance of Mr. Virgil Marvin, Farm Engineer of Toledo Edison Company, to assist the boys fulfill their ambitions.

After the boys had mastered the ability to use the shop tools efficiently they constructed the electrical equipment they previously had wished they could own.

. . . . . (More on page 22)

Left: 500 baby chicks being brooded under an electric brooder constructed in the shop. Brooder cost approximately $8.00 complete. Student stated "he had lost 10 chicks when they weighted an average of two pounds." At right is Roy Hoops, owner of chicks. **Right:** Shop students inspecting the electric lamb brooder after it was completed. Box was constructed of one-quarter and three-eighths inch plywood and heated with a standard screw-in 300 watt heating element. An electric fan supplies the necessary circulation. On top is a small door which may be opened for ventilation. Left to right are: Roy Hoops, Keith Bennington, Amos Meyer, instructor, and Robert Christenson.

★ WARTIME STRATEGY ON THE FARM ★

Make your electric motor help you get more work done on the farm

THE JOB YOU HAVE to do today is as hard a job as any farmer ever faced.

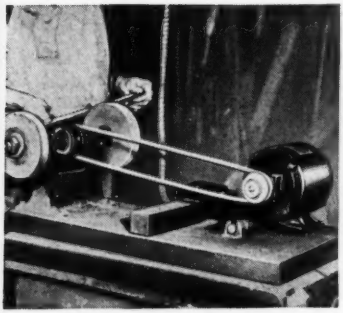
There's more food to be produced. There's more work to be done. And help has never been harder to get.

A good answer to that wartime problem is the *electric motor*. A small motor can relieve you of the handwork that takes so much time. A large motor can get a lot of your heavy work done faster than a whole crew of hired men.

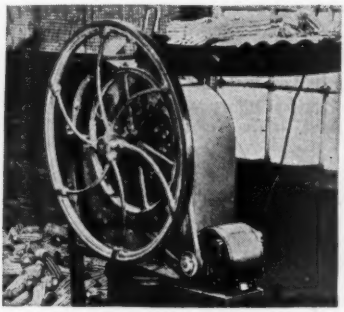
Don't limit the use of your motor to one or two machines. Apply it first to one job and then another. There are more than 35 farm jobs a motor can do. 12 of them are pictured on these two pages.

Look at them. See where you can use your motor. Use it wherever you can and you'll get a lot more done in a day.

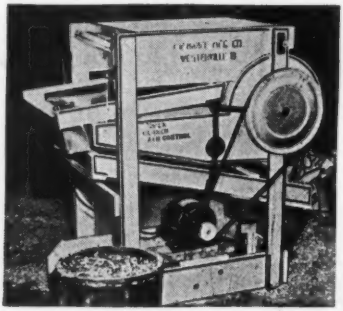
ARE YOU DOING THESE JOBS BY HAND OR BY MOTOR?



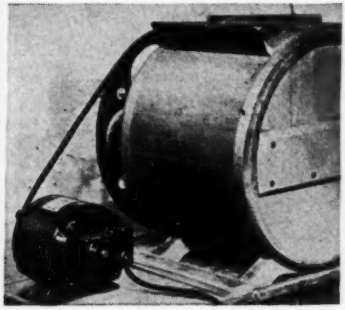
1. FARM SHOP EQUIPMENT. Apply your small motor to your drill press, bench saw, emery wheel. You'll speed up your repair work tremendously.



2. CORN SHELLER (single hole). For 2 or 3 cents' worth of electricity, a small motor will shell 20 to 30 bushels of corn and doesn't get tired doing it.

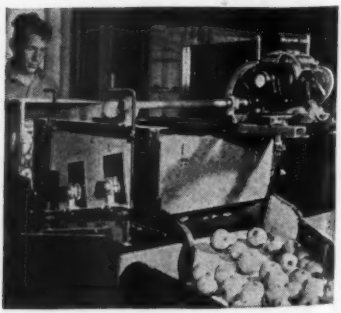


3. FANNING MILL. With the electric motor and its constant speed, you get cleaner and more uniform seed. And think of all the time and labor you save!



4. CHURN. You can have the motor do the churning while you get other more important work done.

5. CONCRETE MIXER (small). A ¼ or ½ horsepower motor will do this job and leave you free for other work.

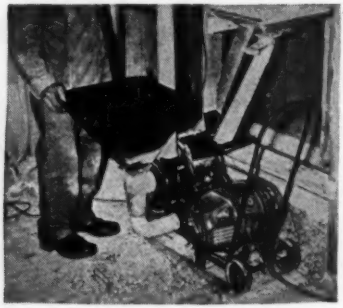


6. FRUIT GRADER. It takes very little time to apply your motor to one machine after the other.

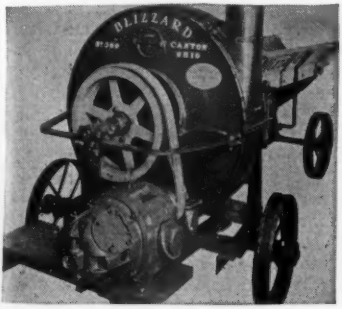
IF YOU HAVE A BIG MOTOR, PUT IT TO THESE SIX USES:

7. CORN SHELLER. With a 2 h. p. motor to help, you can shell a wagon load of corn in an hour.

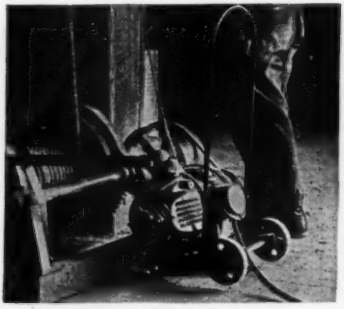
8. WOOD SAW. A motor makes short work of cutting the winter's wood supply . . . at very low cost.



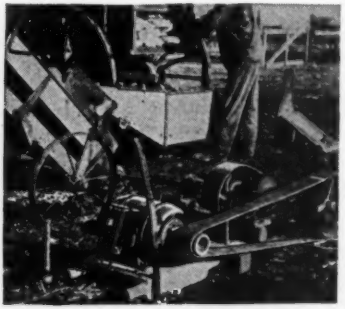
9. FEED GRINDER. If you've been driving to town to have your feed ground, why not do your own feed grinding? You'll save time and money.



10. ENSILAGE CUTTER. With a 5 or 7½ h.p. motor, a silo can be filled using the ordinary help on the farm. It will cost about 1 kwh per ton.



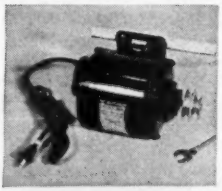
11. HAY HOIST. Put the electric motor on the hay hoist. Only one man is needed to hoist hay. Your motor will do the job faster and with little effort on your part.



12. CORN ELEVATOR. A motor-driven portable elevator saves many hours of labor. It's a wise wartime use of an electric motor.

HOW TO CHANGE MOTORS EASILY FROM JOB TO JOB

THE *FREE* BULLETIN, "Farm Motors," shows how to make *portable* both small motors (above), and large motors (below). Detailed instructions and diagrams are given. With your motor *portable*, you'll be able to apply it to one job after another, in a few minutes. You'll get more work done and produce more food. "Farm Motors" also contains complete facts on motor types, motor controls, pulleys, and wire sizes. In addition, this bulletin explains helpful methods of motor care and suggests ways to use a motor in every branch of farming. Write today to Rural Electrification, Westinghouse Electric & Manufacturing Co., 306 4th Ave., Pittsburgh, Pa. We'll send you a free copy of "Farm Motors."



● **Farm Shop Equipment,** Corn Sheller (single hole), Churn, and Fanning Mill are easy-starting machines and can be operated by a Split Phase Type Motor. These machines require ¼ or ⅓ horsepower. Concrete Mixer and Fruit Grader are harder-starting and need a Capacitor or Repulsion-Induction Motor. Here is the horsepower they use: Concrete Mixer —¼ or ½ h.p. Fruit Grader—¼ to 1 h.p.

● **Wood Saw and Ensilage Cutter** call for a 5 or 7½ h.p. motor. Corn Elevator and Feed Grinder (Hammer Type and Burr Type) use 1½ to 5 h.p. motor. A large Corn Sheller can be run with 2 h.p. motor. Hay Hoist uses 3 to 5 h.p. motor.

● **The horsepower of your motor** is given on the nameplate. Nameplate also gives Motor Type. If Type isn't given on your motor, consult the company that supplies your power. They will be glad to help you with any motor problem you have.

Westinghouse

Westinghouse Electric & Manufacturing Company, Pittsburgh, Pa. • ***Electrical Partner of Agriculture***

Electrical Housekeeping

Edited by **GAIL MEREDITH**

Somebody Can Wear It

Some Tips on Making Over the Old Suit Bob Left When He Joined the Service Into a Tailored Jacket and Skirt with Possibly an Extra Pair of Slacks

IF there is no one in your family to wear that six year old winter coat, this is the time to look around for some one who can. Even if it is out at the elbow, and slightly pulled at the seams, it can surely be cut down and made over—not to look like new perhaps—but still to make a warm and comfortable garment of some kind.

You will not have to look far.

Here's the remodeled suit—and so smartly tailored, any young woman would be proud to wear it.

The Quakers are sewing steadily to provide warm clothing for sufferers abroad; the British War Relief agencies turn good used clothing into suits and coats and dresses and patch work comforts for families in bombed out areas. There are unceasing calls for help in almost every community throughout our own country. If there is any warmth left in that coat, somebody can wear it.

Ann Benson who lives down the road from us had a mink trimmed, green wool coat she has worn for several years. She got it out of mothballs a couple of weeks ago and began to look it over.

"I was all ready to take it down to one of the sewing groups in town," she said, "when Jo began rummaging around in the attic too. She brought out her last year's coat. Until she put it on, I hadn't realized how she had grown this summer. The sleeves were too short. It hit her in all the wrong places. She had just plain outgrown it. So I swapped. I decided that charity still began at home, and kept my coat to make over for her, sending her coat down to be passed on to a littler girl than mine."

Making over this coat was Ann's first attempt at tailoring. She began by ripping the coat apart, then washed it carefully and pressed it with a warm iron so the soft wool looked and felt fresh and new.

When the odd shaped pieces of green wool were all spread out on the spare room bed, she and Jo went to town and selected a pattern simple enough to satisfy Ann's ideas of what a young girl should wear, but smart enough to meet Jo's idea of style, and close enough to the original design to cut to advantage.

Ann didn't try to do the actual making without help. She spent several afternoons at the sewing center which the manufacturer of her electric sewing machine maintains in a nearby town. There she found help in cutting the coat, in fitting it, and in using the attachments for her own sewing machine so she could give the coat a finish that had the look of expert tailoring.

From the mink collar, Ann cut trimming for a round little green hat that sits on the back of Jo's red curls in the fashion approved by her contemporaries.

My sister-in-law always cuts down her husband's suit to fit the boys. This year will make no difference in that habit, but perhaps you've noticed some woman you know walking dreamily around her husband, peering at him from all angles, giving a twitch at a sleeve, maybe, or a speculative pull at the set of his coat. It is safe to say she wasn't considering his profile at all, nor wondering whether he could make that suit last for another three years. And she was not thinking of moths. The chances are even that she was studying how to persuade him to give up that suit without a struggle so she could make it into one for herself.

My cousin Edna wrote me she

When you take inventory of the masculine cast-offs, try to include an extra pair of trousers that can be converted into a pair of slacks to wear with the suit jacket. Then ask your sewing center to show you how to make a professional-looking job with the aid of modern sewing machine attachments.

got the idea from the British women who are using their husband's and son's discarded civies since they have gone into uniform.

"I had quite a time coaxing that gray suit away from Hal," she wrote, but it was getting threadbare around the edges and wearing thin in spots. After I got it, I took it down to the sewing school near us where they showed me how to rip it up, to recut it, and how to use a lot of special attachments for my machine that give my suit the slick tailored look of a ready-made.

"If you decide to make a suit for yourself, Gail," she went on, "get the whole thing cleaned up first then take a good look at the wrong side of the fabric. If it's a worsted or some of the summer suitings, they can often be used on the wrong side. That helps make the suit look quite like new."

She warned me, and I am passing the warning along to you, to get a pattern that bears a close resemblance to the suit itself. I've found that there are patterns on the market for making her suit from his'n. Of course sleeves have to be recut, and reset to pared down shoulders, and the sides tapered in and shaped. The closing of a double breasted coat can be reversed, and additional buttonholes added to give the needed finish."

"Hal's coat had slot pockets," Edna's letter went on, "but I cut out patch pockets from unused trouser pieces and stitched them on with the edge stitcher to get a precise, reinforced stitching around the edge."

From Trouser to Skirt

A simple four-gore skirt pattern seems to work the best when you are making a pair of trousers into a skirt. You turn them upside down, you know, using the narrow part of the leg at the waist line. The width of the trousers and the width of you determine whether you can make a skirt with a center pleat or whether you'll have to forego any pleat at all.

There is a way around this unflattering situation. You can put in an inserted pleat with a strip cut out of the unused top of the trousers. There was an extra pair with Hal's suit that Edna ripped up and cut down to make a pair of slacks to wear with the jacket.

"I'd rather have had a contrasting color," she said, "but who am I to complain because Hal's slacks are good for the duration?"

Here are folks who had fun learning that they can wear made over clothes and like it. It is a little thing to use—old wool so the new can clothe our soldiers. If it's wool, remember—somebody can wear it.

If You Wear Rayon

Since most of the silk in the world has been drafted for the air corps, there won't be much left to knit up into stockings. We'll be using cotton instead and rayon that looks like silk.

It is because the stockings look so much alike but are so different that clothing specialists are trying to show people how they can get long wear and great satisfaction from these rayon stockings with proper care.

The first point is the buying.

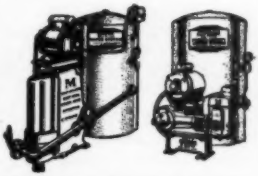
UP Goes MILK PRODUCTION

When Plenty of **FRESH WATER** *is supplied*

Each producing cow Needs 35 Gallons a Day!

Your milk cows will drink ten or more times a day and many times at night if fresh water is always handy — as when piped to barns. All your farm animals will drink more, be more productive and healthier, if plenty of clean, fresh water is available. Running water is helping many farmers meet production quotas without increasing their investment in livestock, buildings or acreage—and it saves labor. Keep your well equipment and water system working efficiently. Call your nearest Myers dealer for experienced, economical service.

Farm animals drink 10% to 40% more when fresh, clean water is kept constantly before them — and they show a proportionate increase in production.



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Mfrs. of Farm Operating Equipment
1128 Fourth St., Ashland, Ohio
Send your free water system book and name of your nearest dealer.

Take Off Your Hat to The MYERS

Name .....

Address 24WH2

Be more careful in selecting exactly the right size and length, they say. Buy them full-fashioned for perfect fit. Buy three pairs at a time. At first glance that may seem extravagant, but it isn't if you think about it a minute. Wearing them one after another you'll be able to shift them around and match up pairs as stocking after stocking starts a run. You may say that you've always done that by buying two pairs at once.

I know, but it takes three pairs to be a lady wearing rayon. Rayon dries more slowly than silk. You can't suds them out at night and slip them on in the morning. You need to give them twenty-four or better still forty-eight hours for drying. See? One pair on. One pair in the dresser drawer, and one pair drying.

They're Easy to Wash

The washing is easy. You make a suds in luke warm water and squeeze the stockings in it. Gently, very gently. Don't rub them with soap nor twist them in your hands to wring out the water. Just squeeze them—in a bathtowl if you like, and hang them over a smooth rack or rod.

And don't ever think that drying them slowly isn't important, you folks who have grown used to switching a pair of nylons through a warm suds and putting them on in an hour or so later.

The fibers of rayon, strong and substantial enough for good service when they are dry, are weak and fragile when wet. A friend of mine told me of her experience the other day. She washed out a pair of stockings in the morning and expected to wear them in the afternoon. When she went to get them she found that the tops were still damp. She was in a hurry, and these were her very best, her newest stockings, so she pursuaded herself that this little dampness wouldn't matter. It would dry soon enough.

She started to put the stockings on carefully, as she had been taught, but when she began to pull them up smoothly, the heavier tops came away in her hand.

She could scarcely believe her eyes, but there she sat with a ring of damp stocking top circling her leg and the silky nylon settling back below her knee.

"I forgot to tell you we wired the sugar bowl so with the third spoonful you get a shock."

You can see what had happened. She had never noticed that the tops of those stockings were rayon, or that they deserved any special care. She is on the lookout for trademarks now.

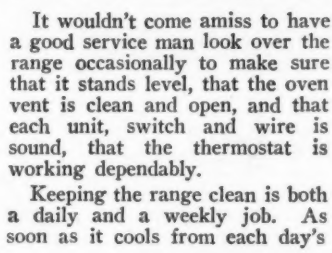
Thoroughly dried those stockings would have been strong enough and elastic enough for good wear.

Watch for directions. It pays to stop a minute and read what the manufacturer has to tell you about the care of the thing he makes—stockings or stoves.

Take Care of That Range

It wouldn't come amiss to have a good service man look over the range occasionally to make sure that it stands level, that the oven vent is clean and open, and that each unit, switch and wire is sound, that the thermostat is working dependably.

Keeping the range clean is both a daily and a weekly job. As soon as it cools from each day's use, and before any spilled food has a chance to dry or harden on the range, wipe it clean with a damp cloth. Wipe up all fruit juices and other acids at once. Wipe out the lining of the oven.



When you spill food on the surface units themselves, let it char and crumble so you can brush it away lightly. Never use a stiff brush or a sharp pick on these units.

Once a week wash the stove carefully with warm soapy water and wipe it dry. Unless it is unusually dirty, the metal trim will not need this soap and water bath. If it is chromium, give it a polish with a clean dry cloth. If it is nickel, use any good metal polish.

Unless yours is a family so big that you need all the heating elements at once, use the surface units alternately, as you would the spare on your car. Some man with an insatiable curiosity went around watching women start a meal. He came back with the report that when only one unit was used, 90% of the time that unit was the left front one. It is on my range. Which do you use most?

Even switches will last longer if you do not always turn them in the same direction. If yours is a range whose switches do turn either way, snap them counter clockwise now and then and let that simple change cut down the wear.

We've gone back this year to a study of little savings.

"For the want of a nail—"

Hot Meal for School Lunch

We no sooner tear August off the calendar than lunch baskets bob up to tax our ingenuity and our patience for another school year. Last winter during Farm and Home Week at the Wisconsin College of Agriculture, I picked up a paper on school lunches that seemed to me an excellent thing for any school board, for any P.T.A. group, or for any group of mothers to consider.

It began with

A Pattern for the School Lunch

Milk ½ pint to drink; some in cooking
Vegetables or fruit, or both

Egg, lean meat, fish, cheese, peanut butter, or dried peas or whole grain or enriched bread or cereal, beans

Butter

(Molasses or oatmeal cookies, milk pudding or plain cake may be added, although they are not essential)

Because a hot dish prepared at the school rather than at home reaches every child, they advocate such preparation with this simple recipe.

Corn and Potato Chowder

Ingredients—12 Servings

Salt pork	2 ounces
Onions, chopped fine	1 small
Potatoes, finely diced	4 cups
Corn, canned	2 cups
Milk	10 cups
Celery salt	½ teaspoon
Paprika	⅛ teaspoon
Salt	to taste

If you wish to make as much as 25 servings of the chowder, double the quantity of ingredients shown above with the exception of the salt, which is as usual—to taste.

Cut the salt pork in small pieces and cook with onion until light brown. Add the potato and simmer about five minutes. Add the corn and the milk and simmer until the potatoes are tender. Season and serve immediately.

The equipment necessary for preparing simple hot lunches is not extensive. This paper recommended in part:

Measuring

Measuring cups and spoons
Quart measure

Mixing and Preparing

A work table with an easily cleaned surface
Mixing bowls
Medium sized strainer or sieve
Can opener
Paring knives
Large mixing spoons
Table spoons

Serving

Dishes or silver to serve each child. These may be brought from home

Cooking

Two or three burner electric plate. An oven permits greater variety of cooked dishes
Large kettle with cover
Double boiler

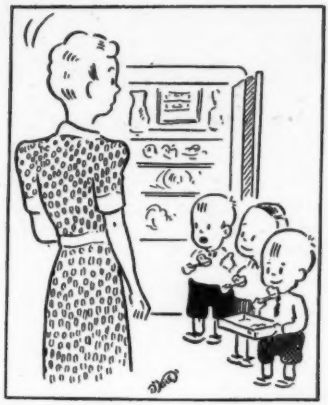
There are many agencies ready to help you work out plans for school lunches in your district, your County Home Demonstration Agent, your county nurse, your home economics teachers. Perhaps your college of agriculture has a bulletin on school lunches.

Electric Roaster Solved Mother-in-law Problem

(June Contest Winner)

Out in the country the problem of the older woman left a widow is more difficult to solve than the same problem in a city. The farm must continue to be worked but it needs a man. When my husband died I vowed I would live by myself and an electric roaster has made it possible for me to do so. I took two upstairs bedrooms in the ell of the house, making one of them into a living-bedroom with a studio couch, and the other into a kitchen-dining room. A small sink against one wall is flanked by a continuous shelf for working space, under which is shoved two old bureaus for storage space. On this shelf sits my handsome ivory-tinted roaster and an electric plate, thus making it unnecessary to give up space for a stove. In the roaster I have frequently prepared a dinner for six or seven people and served it on the extension table which is shoved against the wall when not in use. A scalloped dish for a church supper, or pies and cakes

SAVE with... Sunbeam
AUTOMATIC MIXMASTER
THE BEST FOOD MIXER MADE
I SAVED INGREDIENTS AND SAVED MONEY WHEN I MADE THIS DELICIOUS CAKE WITH MIXMASTER.
VICTORY
Sunbeam VICTORY CAKE (NO SUGAR)
• CAKE: ½ c. shortening, 2 tsp. grated orange rind, 1 c. white corn syrup, 2¼ c. sifted cake flour, 2¾ tsp. baking powder, ¼ tsp. salt, 2 eggs unbeaten, ½ c. milk, 1½ tsp. vanilla extract. Cream shortening and rind No. 8 speed 1 min. Gradually beat in syrup; scrape bowl. Then beat 1 min. Add ¼ sifted dry ingredients gradually on No. 8. Add eggs one at a time beating 1 min. after each. Scrape. Use No. 1 speed and add remaining flour mixture in thirds alternately with milk and vanilla. Scrape. Bake in 2 greased 8" layer pans in moderate oven of 350° F. for 30 min.
• ICING: ½ tsp. salt, 1 egg white, ½ c. light corn syrup, ¼ tsp. lemon flavoring, ¼ tsp. almond flavoring. Add salt to egg white and beat until stiff on No. 8 speed. Add corn syrup gradually, same speed. Add flavorings. Whip on No. 8 until icing holds a peak.
MIXMASTER SAVES MY TIME, ENERGY FOR RED CROSS WORK.
MIXES
MASHES
WHIPS
BEATS
STIRS
BLENDS
JUICES
FOLDS
CREAMS
"Dial" YOUR FAVORITE RECIPE
Only Mixmaster has the exclusive MIX-FINDER Dial on which all the everyday mixing needs are plainly indicated. You simply "tune in" the recipe. And you know the results will have that "success secret" of delicious food—even, scientific mixing. Higher, lighter, velvety-textured cakes . . . creamy-fluff mashed potatoes . . . smooth-as-silk icings, sauces . . . more juice from the same oranges. No end to the time, armwork and money it saves.
CHICAGO FLEXIBLE SHAFT CO.
5600 W. Roosevelt Rd., Dept. 30, Chicago
Canada Factory, 321 Weston Rd. So., Toronto
Over Half a Century Making Quality Products
Famous for Sunbeam TOASTER, IRONMASTER, COFFEEMASTER, SHAVEMASTER, etc.



"My reputation was at stake, Mom. When I bragged about the swell ice cream our new electric refrigerator makes, they demanded proof."

for the Grange are baked as easily as in a stove oven. Christmas cookies were baked there and strawberry jam for a war bride will be produced this week. When I am alone, small dishes of vegetables and meat are tucked side by side in the roaster to warm up for my own meals. For an outdoor picnic on the back lawn, a long cord is plugged in through a window and rolls and potato chips are served hot from the roaster. I can heat up a flannel for an aching joint!

Yes, mother-in-law still has her own home where she can be independent and cook as she pleases, thanks to her electric roaster.

Incidentally an electric pump and pressure system put on the old well furnishes water upstairs, an electric refrigerator saves lugging ice upstairs, an electric fan keeps me cool in the sultry August days, and an electric heater helps out the steam boiler on the windy days of March. Flatiron and a toaster are other electric conveniences, but it is the roaster that makes my apartment possible. No lone woman need burden the lives of the next generation provided she is still on the active list and can afford the small sum necessary to set up in this simple way for herself.

"INDEPENDENCE."

★ *Buy War Bonds* ★

"Pioneering" With a Percolator and Grill

By MRS. S. L. COLEMAN

When my daughter moved into her new bungalow in the suburbs of a crowded city, where, because of war construction going on, gas heating and cooking connections were long delayed—she did what she called "pioneering housekeeping." In this case a percolater and an electric grill were substituted for the wide fireplace in the pioneer cabin.

Refusing to take her meals out

or to offer her husband the alternative of subsisting on cold canned foods, the daughter who faced an empty space where her gas stove was to stand, put her wits to work and the result was satisfying home cooked meals from the grill and the percolater. She has passed the idea on to other young housekeepers who have found themselves in similar circumstances. In this abnormal age in which we live thousands of young wives following husbands to camp, or thousands of girls trying to exist in great cities where they have jobs may find it possible to cook and serve nourishing meals without the accustomed equipment for cooking.

The percolator had its job to do as a receptacle for boiling eggs, heating soup, even for cooking cereal. With careful scalding and sunning it was kept fresh and free of odors. At breakfast the bacon and eggs, cooked in a light frying pan on the grill, coffee in the percolater, fruit and a prepared cereal made a delicious meal, with French toast made on the grill after the eggs and bacon were cooked. This menu was varied by occasionally serving sausages cooked on the grill, followed by pancakes also cooked on grill, coffee and fruit.

"Hot" Schedule for Utensils

On the days when the family did not lunch down town (both husband and wife worked in town) a satisfying lunch consisting of one hot dish, soup, stews, succotash, a green salad or fruit with a drink, was served.

At dinner the two cooking utensils were really put to work. Eggs for garnishes, or for stuffed egg dishes, were cooked in the percolater; soup was heated up or cooked in percolater then kept hot in deep covered bowl, while the coffee was percolating; sometimes the coffee was percolating while the soup was on the table. Many kinds of meat were cooked on the grill, country-style steak, chicken, stews of all kinds, served piping hot. Of course only one meat dish was served for dinner, and the vegetable, squash, okra, snap beans, or what not was cooked first, then quickly reheated after the meat was placed on the table. Uncooked vegetables were a specialty, served in salads or simply cut into small strips, piled in a bowl and served au natural.

September Contest

Lots of women tell us that electricity has helped them earn money, extra money for schooling, for taxes, for defense bonds. Has electricity helped you earn money some way?

If it has, and you care to write us a letter about it, you stand a chance to win the five dollar check we will send to the writer of the most interesting and helpful letter.

The contest closes September 30, 1942.

Send your leter to Gail Meredith, 700 S. Mills, Madison, Wis.

The Morris County, N. J., 4-H Club now has a project of raising Seeing Eye Dogs, the dogs that are trained as guides for the blind. They take the puppies at two months old and keep them until 14 months old when they are put in training.

SAVE SERVICE

Do not run belts too tight. Tight belts cause excessive bearing wear of motor and machine and shorten the life of the belt. Always have the pulling or tight side of the belt on the bottom; the belt clings to the pulleys better and need not be run so tight. Keep leather belts dressed with neatsfoot oil. Flat canvas or rubber belts should be no thicker or wider than the job requires. They cling better and waste less power than thick, wide belts. Have the belt just tight enough so it will not slip. Avoid sticky belt dressings on leather and rubber. They waste power and ruin belts.

Dirty oil causes abrasion, heat and wear in a motor bearing. If the oil in a motor bearing is dirty, drain it and put in fresh. If it gets dirty quickly again, the bearing may be wearing excessively. Better have a service man check it. Badly worn bearings will permit the rotor to strike the stationary part and ruin the windings.

Never leave an iron connected when not in use. Overheating is detrimental to the element and shortens the life of the iron.

Do not permit an appliance cord to get wet or greasy. Wipe with a dry cloth. Grease and dirt will cause the covering and rubber insulation to deteriorate and make the cord unsafe to use.

A leaky gasket on a refrigerator door may lose cold from the box and cause the unit to run excessively. Close the door on a piece of writing paper. If it pulls out easily, there is too much leakage. The door needs adjusting or a new gasket. Keep the gasket clean and do not get grease on it if you want it to last.

If fractional horsepower motors fail to start when switched on but run if given a start, the trouble is probably in the centrifugal switch inside of the motor housing, or the spacer washers on the rotor shaft may be worn out, keeping the starting switch from making contact. If there is more than 1/16 in. end-play in the shaft you probably need new fiber spacer washers on the shaft. The end-bells of the motor containing the bearings must be removed to replace these washers. If that does not correct the difficulty, a new switch may be necessary.

Pumps should be oiled regularly. Examine the crank case oil to be sure leaking water has not filled the bottom of the case. Remember that oil will float on top of the water and the case may seem to be full when there is only a little oil on the surface.

If pressure switches get out of order it is best to send them to the pump company for exchange.

Poultry Picker Speeds Work

This fowl picker is in use on the R. C. Freeman farm near Newhall, California. It consists of a large drum bristling with 190

flexible hollow tubes of heavy corrugated rubber (see June 1940 issue, p. 30). A ¼ hp motor spins the drum at a dizzy speed while a scalded fowl is held against it. Feathers are whisked off before you can say "Are you buying War Bonds regularly?" The machine picks about 90 chickens an hour, as compared with the 12 to 15 that can be picked by hand. It does a better job, too, because the corrugations in the tubes remove pin feathers. Mr. Freeman also uses a large walk-in refrigerator to keep fowls fresh for sale after they are dressed.

MARY SHOOP.

Nothing Takes the Place of

HOT WATER

When and Where You Need It!

Remember! Hot water is absolutely essential to CLEAN MILK. Ask your milk inspector! Don't skimp with hot water when you can have an ABUNDANCE of it. ALWAYS, right where you need it, at Small Cost. Nothing in years has made such a hit with American dairy farmers as the

SURGE DAIRY-MAID WATER HEATER

It protects their Milk Checks, with less effort and less expense. Low wattage heating, automatic control and heavy insulation keep operating costs amazingly low. Needs no pressure or expensive installation. Just plug it in!

DEMONSTRATION FREE

We'll gladly prove the Surge Dairy Maid will Save you Dollars with a Free Demonstration. Write today for full particulars of our offer.

DON'T WASTE TIME! lugging hot water to utensils . . . or utensils to hot water. That slow and inconvenient way is NOW a thing of the past!

FREE BOOK "The Magic of Hot Water." Send for it!

BABSON BROS. CO.

2843 West 19th St., Dept. 5516, Chicago, Ill.

Vo-Ag Department

. . . . . (Here from page 13)

Until these boys entered the Vo-Ag Department various reasons such as: "I cannot afford to buy new electrical equipment; the cost of operation is too high"; and many more kept them from owning or using the necessary electrical equipment they later found to be profitable.

Showing the same brooder with a set of twin lambs, after being in the brooder 30 minutes. Left to right: Amos Meyer and Fred Tredway, owner of the lambs.

After studying the research and experimental work that had been performed on various farm electrical appliances they decided to build what their respective projects needed.

A combined electric water warmer and stand for chickens was the first job completed. Still skeptical, the boys waited until the warmer proved it should have a place in the house of the laying flock. At the end of the first month twelve electric water warmers were in continuous use and more boys have already made plans for next winter.

Due to the fact that one boy lost six out of a litter of ten pigs because they were chilled, the rest of the class immediately decided to build electric pig brooders. In all, ten boys used the pig brooders and each boy stated "I would not again do without the electric pig brooder for winter and early spring litters."

Four boys in the department each needed chick brooders. Again experimental data and assistance from Mr. Marvin started the boys on their road to success. Each boy constructed an electric brooder which brooded 350 chicks and cost approximately $8.00 complete. The interesting thing about one particular boy was that he thought his new electric brooder would cost more to operate than the fuel oil brooder used in the past. After four weeks of brooding with the electric brooder constructed in the shop his total electric bill was $7.28 compared to $16.00 for the same length of time with a fuel oil brooder. Besides the saving in cost of operation on the the electric brooder the boy stated "I saved many hours of labor normally used in cleaning the stove and filling the tanks and also reduced the fire hazard."

Seeing that electricity was playing an important role in saving new born pigs the idea of an electric lamb brooder was put into practise. Again, electricity saved more money for the boys because lambs were saved that would have died if the artificial heat had not been available.

Our program for this year will probably be more extensive, on home made electric farm equipment, due to the difficulties of farmers procuring commercial equipment. We use many of the worthwhile ideas from ELECTRICITY ON THE FARM, which we receive monthly and keep on file for future reference.

Fans Aid Beef Gains in Ohio

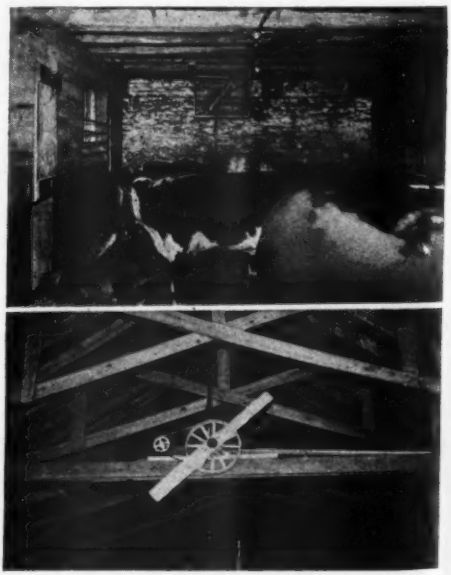
Last summer, the Ohio Experiment Station experienced difficulty in keeping their beef cattle barn cool enough so that the cattle would put on weight. We installed homemade fans shown in the photographs. These fans were intended to just move the air inside the building. There was a large doorway at one end, and part of the air did move through the doorway into another section of the building and was replaced by air from the cooler side of the barn.

The upper picture shows a fan mounted near the end of a feed barn. The lower view shows how the fan blade is attached to an old car wheel and driven by a V belt from the motor.

According to the operators the fans gave very satisfactory results. The litter did not get so wet, the flies were kept away and the cattle gained every day, which they did not do the previous year.

A blueprint showing how to make the fan blade from a piece of white pine 3" x 5" x 57" is available from the Agricultural Engineering Department, Ohio State University, Columbus, Ohio, for 15c. A ½ hp motor is used to drive the fan. The blueprint shows the method of mounting and pulley sizes as well as size and shape of blade.

W. A. JUNNILA.



By JEROME J. HENRY

Doesn't Need Kilts

Once known as the boy wonder of radio, "graduate" of the NBC Children's Hour, and radio "wee Sir Harry Lauder," that's Walter Campbell Tetley, youthful portrayer of Leroy Forrester, the nephew of Hal Peary in The Great Gildersleeve.

While a student at the University of Wisconsin, Eloise Kummer of radio fame added the fourth "R" to the traditional three "R's". "R" stood for radio when she took a dare from a friend and was auditioned for a dramatic program planned by the university station. Her only acting experience had been in an eighth-grade school play in her home town of Sheboygan, Wisconsin, but she took up the challenge and got a fifth "R"—the Role.

Walter, who's just about 20 years old now, took his first radio audition with Marge Tucker in 1930, but his stage experience goes back even further. He first showed acting ability at the age of five when a kindergarten teacher asked him to sing a Scottish song at a school party. He put over the number with a bang and was on his way.

The "wee Sir Harry Lauder" moniker was given him at the age of seven when he was imitating the famous star on a theatre circuit. Lauder once caught his act, was delighted with it, and dubbed him with the title. Although much of his success has stemmed from his ability to portray a Scot, Walter's favorite dish is spaghetti.

Lover of Stooges

Rapid-fire Bob Hope, one of radio's most successful comedians, has a warm spot in his heart for stooges. His love for stooges goes back to the early days as a vaudeville comedian. This was after he had been a shoe salesman, telephone lineman, delivery boy, paper boy, drug store clerk, soda jerker, service station attendant, and butcher.

Bob had just decided to become a comedian and he made his first appearance on the stage of his home town, in Cleveland, Ohio. As Bob made his entrance, the patrons sitting in the first four rows of the orchestra opened up

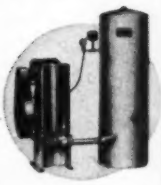
Elmer Davis (left) and Edwin C. Hill, both natives of Aurora, Indiana, offer CBS listeners an unusual contrast in the presentation of news. Davis depends on the weight of the news to carry interest, whereas Hill dramatizes the human interest elements.

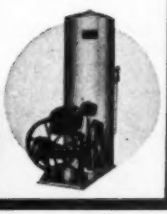
LOW-COST Running Water ANY TIME YOU WANT IT!

An Aermotor Water System will give you an inexpensive and always dependable source of running water. It is economical in operation. And, being better-built it's longer-lasting.

Aermotor deep well pumps have a completely closed gear case—no dirt or water can enter. All moving parts are fully covered to assure safety. Shallow well pumps are very quiet-running. They have a handy built-in *fresh* water system. The piston rod has a special guard to keep water out of the oil reservoir. Automatic oiling eliminates attention. Any Aermotor system will give you lasting satisfaction.

Learn why the Aermotor is a wise investment. Send for latest book, and see your Aermotor dealer.





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2500 ROOSEVELT ROAD · CHICAGO ILLINOIS

Famous, easy running Electric Cow Clipper— STEWART CLIPMASTER

Preferred the world over for its greater speed, ease of handling, rugged, lasting durability.

New anti-friction tension control assures perfect tension between blades for cooler, lighter running—faster, easier clipping. Makes blades stay sharp longer. Exclusive Stewart design ball-bearing motor is air cooled and entirely encased in the insulated **EASY-GRIP** handle that is barely two inches in diameter. Completely insulated—no ground wire required. The fastest clipping, smoothest running, easiest-to-use clipper for cows, horses, dogs, mules, etc. A $25 value for $21.95 complete. Slightly higher West of Denver. 100-120 volts. Special voltages slightly higher. At your dealer's. Send for FREE catalog of Stewart electric and hand-power Clipping and Shearing machines. Made and guaranteed by Chicago Flexible Shaft Company, Dept. 30, 5000 Roosevelt Road, Chicago, Illinois. **52 years making Quality products.**

newspapers and proceeded to read them for a calm disregard of what was going on on the stage. The rest of the audience was convulsed with laughter.

Of course the newspaper readers were all Bob's friends and his first stooges. He's liked stooges ever since.

Measles Are Not Freckles

Geraldine Kay, lovely young star of "Author's Playhouse," is an actress of great determination. This is well illustrated by a story of her early career as a featured juvenile in a stage play. She was suddenly taken down with an attack of measles. She was 18 at the time and it broke her heart to think of giving up the part. She hit upon a desperate scheme, by trying to pass her measles off for freckles. The rest of the cast did not tumble, however, and Geraldine was packed off to bed. She recovered in due time, of course, and went on to win new laurels in the field of radio.

Do you know that . . . .

* * * listeners thousands of miles away hear radio broadcasts before those in the last row of studio audiences because the radio waves travel with the speed of light—186,000 miles per second—while the air-borne studio sound waves travel only about 1,100 feet in the same time.

* * * The NBC Red and Blue networks were so called because those colors were first used in tracing the networks on a map.

* * * 78 per cent of the nation's schools use radio to supplement their regular teaching curriculum.

Rural Service Man Honored

W. M. Shepherd, rural service man of the Arkansas Power & Light Co. at Pine Bluff, Arkansas, has recently been elected President of the United States Junior Chamber of Commerce. The Junior Chamber is an organization of live-wire young business men throughout the country. They are doing a fine job in promoting worth-while community projects, many of which are connected with farming enterprises. "Bill" Shepherd has made a name for himself in Arkansas in working with 4-H and FFA boys in promoting more and better livestock in the state. He has been instrumental in organizing the Southwest Arkansas livestock exposition and is treasurer of the Tri-State Livestock Association which makes loans to needy cotton farmers for buying good beef and dairy cattle, hogs and poultry. The Junior Chamber indicates that it has its feet pretty well on the ground when it picks a man for President who is as close to the soil as Bill Shepherd.

Electric Stimulation

. . . . . (Here from page 12)

semen. The method and equipment were slightly different from that employed with rams. A laboratory magneto so mounted that it could be operated with a hand crank was used as a source of current. It delivered 35 volts and 20 milliamperes at about 30 revolutions per second. This current was applied for 5 seconds and then cut off for a similar interval; 10 to 12 such shocks were generally all the stimulation that was needed. One electrode was held on a small spot where the hair had been sheared between the fourth and fifth lumbar vertebrae. The other copper electrode was enclosed in a glass tube except for the very tip which flared out over the tubing. The glass insulated all of the electrode except the terminal tip which passed the current some distance up the animal's rectum and completed the circuit for stimulative purposes.

Some nine million children will eat school lunches this winter provided in part by the Government. Even now certain farm crops, such as raisins, are being reserved for the purpose.

Mrs. Martin Graham of Yukon, Okla., in writing to thank us for her June Contest prize says that picking tobacco or tomato worms off plants was a disagreeable job until she started using a spring clothespin to "pick" them.

Monarch ELECTRIC *and* COAL-WOOD COMBINATION RANGES

Today's most popular "high line" range: electric on one side—coal or wood on the other. Provides year 'round kitchen comfort.

See a MONARCH outlet or —

Write for booklet illustrating complete line.

MALLEABLE IRON RANGE CO.
1242 Lake Street Beaver Dam, Wis.

Questions and Answers

Refrigerators Available?

▶**Question:** *Where can I buy a refrigerator?* F. E. S., Md.

▶**Answer:** About the only chance you would have of buying a refrigerator now is to get a reconditioned unit from some local dealer. New refrigerators are no longer available except on high priorities.

Small Dehydrators

▶**Question:** *Please send me information about small dehydrators for farm use. How much do they cost? How much juice do they use?* Mrs. A. T., Minn.

▶**Answer:** Small dehydrators like those shown in our June issue are not being made commercially and offered for sale, so I cannot give you the price. The cost will depend upon the materials you have available at home and whether you do your own work or hire it done in having the cabinet made; may be from $3 to $20.

The power consumption is about 1 kw per hour and the drying time will vary from 8 to 20 hours for different products.

Service Wiring

▶**Question:** *Please tell me how to wire from the highline service fittings through meter and to and through fuse box.* A. M., Ill.

▶**Answer:** Since different power companies have different requirements for the installation of service entrances and meters, you should ask the power company from whom you expect to buy electricity how the installation should be made.

Under separate cover we are sending you a General Electric Bulletin on Wiring and you can also buy a good booklet on the subject entitled "Wiring Simplified" by H. P. Richter from the Park Publishing Co., P. O. Box 774, Evanston, Ill. The price of this booklet is 25c.

Cooling Sheep Shed

▶**Question:** *I have a large flock of sheep which are sheltered every night. How can I cool off the building with electricity? Could a fan be made and use a motor with shaft in some inexpensive way to cool the building? The sheep enjoy being inside through the day. These buildings are* 10x40 *feet.* M., Maine

▶**Answer:** There are several ways you could keep your sheep shed cool during the day. Shade would help a lot, and another roof covering 6 in. or more from the present one with an air space between for ventilation would help.

If the air outside is cooler than that inside you can do a job of cooling by using an exhaust fan in one end of the building. It should be placed in an opening through the end wall near the ceiling and should have a capacity of about 1,000 cu. ft. of air per minute. This would give you a complete air change in the building about once every four minutes. A special type of fan built for moving large quantities of air at low pressures should be used. They can be belt driven or direct connected. See page 22, this issue.

Another possibility if you have lots of water would be to have a sprinkler system to spray water on the roof during the heat of the day.

The fans used in the Vermont barns were made by the Torrington Fan Company of Torrington, Conn. You would probably need an A-9 priority or better to secure one. Your County War Board should be able to help you get it.

Hammer Mill for 5 HP Motor

▶ **Question:** *We have a 220 volt, 5 hp motor and I would like to know how big a hammer mill we could use with the motor as power?* F. E., Iowa

▶ **Answer:** It is not possible to tell you how large a hammer mill can be operated with a 5 hp motor because hammer mills differ so widely in design and construction as well as in use. Some hammer mills have long cylinders of small diameter or varying diameter, while others have narrow cylinders of large diameter and different mills are made to be operated at speeds from 2000 to 5000 rpm.

Perhaps the best advice I can give you is to buy a mill rated at from 3 to 5 hp rather than one rated at from 5 to say 10 hp. The smaller mills usually cost less and will give more efficient operation and are more satisfactory because they clog less easily. With the larger mills it is necessary to feed carefully in order not to overload and clog the mill.

Each hammer mill has its optimum grinding speed. This speed will be slower for cylinders of large diameter. If the mill is run at low-

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DEMING WATER SYSTEMS

er speed in order to use a smaller motor, the rate of grinding and efficiency of grinding will be considerably decreased, although you may still be able to grind.

Electric Heater for Wash Water

▶**Question:** *I would like a water heater of the type you plug in for shaving water but large enough to heat wash water with. I do not have running water so could not use the other kind.* N. W. H., Ohio

▶**Answer:** There are water heaters similar to shaving water heaters made in larger size. They are made so that if you wish to get a bucket of hot water out you simply pour a bucket of cold water in the top and the hot water flows out. The tank is always full of hot water. It holds about 10 gallons. These are sold by the Babson Company, makers of Surge milkers. Their address is 2851 West 19th Street, Chicago, Ill.

Two Phase Motor on Single Phase Line

▶**Question:** *A short time ago I bought at the closing out of an estate a Westinghouse 5 hp., 220 volt, a.c. motor to use around the farm. Had a 220 v. circuit installed but was informed by the electrician that I could not use the motor on our current here, as it is a two phase motor and our current is single phase. In my ignorance of things electrical I had never heard of different "phases" in connection with motors.*

Is it possible to make any changes in the motor I have so that I can use it on our single phase line?

H. T. H., Maine.

▶**Answer:** I am sorry I cannot offer you much encouragement with your two phase motor. These motors are built quite differently from single phase motors and it would not be practical to convert them. Furthermore, two phase motors are not very widely used so there is a limited market for them.

Homemade Electric Fence

▶**Question:** *I am wondering if 110 volt current would be safe to use for an electric fence if the current would first have to pass through two 7 watt bulbs and also protected by a small ampere fuse. The fence wire would carry current only on contact.*

I know of some farmers using this plan. What size fuse should be used? Please let me know if it is a safe method of fencing or how can it be made safe. H. R., Ind.

▶**Answer:** The homemade electric fence using two 7 watt lamps in series as resistance and a small fuse would, in spite of the resistance, be definitely dangerous. Most animals and some human beings are very sensitive to electric shock and there should always be some periodic interruptions of the current so anyone grasping the fence wire would not "freeze" to it. Then it is too easy to replace the 7 watt bulbs with larger sizes or to short circuit them, which would make it an extremely dangerous device.

Personally, I would not take the chance of suffering all the remainder of my life for having killed someone in an effort to save the price of an approved fence controller.

Change 133 Cycle Motor to 60 Cycle?

▶**Question:** *I have a question on an electric motor. I would like to know whether my 133 cycle electric motor, 100-115 volts, could be rewound so I could use it on a 60 cycle line. If so how much will it cost and where can I get it done? J. S., Ind.*

▶**Answer:** If your 133 cycle motor happens to have its coils connected in parallel, it could be reconnected so it could be operated on a 60 cycle circuit. This change would reduce the speed of the motor about 60% and the horsepower about the same amount. If the coils are connected in series, the wire would have to be removed and the motor rewound which would be so costly, it would hardly be warranted. You would have to have the motor examined by an expert to tell whether it is series or parallel connected.

I would suggest that you look in the classified column of the telephone directory in the city nearest you and try to find an electric motor repair shop. They are located in most large and medium size cities, or, you could copy all of the information off the name plate of the motor and send it to the manufacturer who could tell you whether it could be rewound.

4-H Rural Electrification Contest

The deadline for submitting records in the 4-H Rural Electrification Contest is approaching. In addition to County and State awards, the Westinghouse Company makes available six college scholarships of $200 each selected from State winners. But win or not, the effort devoted to such an interesting project is its own reward.

Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request to What's New Department, ELECTRICITY ON THE FARM, *24 West 40th Street, New York, N. Y.*

Dehydrator Thermostat

A snap action temperature control for electrically heated driers is available at $7.50. It is calibrated for setting at any point between 100° and 212° and is accurate to within 6°. It has a capacity of 15 amperes or a ¾ hp. motor. Heating units—200w infrared lamps also available from the same source.

New Publications

(*Publications are obtainable from the addresses given in the description. Some states make small charges for bulletins sent outside the state.*)

• ELECTRIC WATER SYSTEM FOR THE FARM. Extension Pub. 260, Univ. of Tennessee, Knoxville, Tenn. 30 pp., illus. Planning a system; wells; water needed; types of pumps; costs; pressure tanks; installation; piping and care. An excellent bulletin.

• FOOD PRESERVATION GUIDE. 5½ x 7½, 265 pp. 60c with paper cover; $1 cloth. The Bunting Publications, Inc., North Chicago, Ill. One of the best, most explicit treatises we have seen on home canning, preserving, drying, brining and winter storage. Takes up all fruits, vegetables, meats, poultry, fish, pickles, eggs, nuts, etc. Recipes, time tables, charts.

CLASSIFIED ADVERTISING

LABOR-SAVING ELECTRIC FARM SUPPLIES. Fly electrocutors—cheaper than spraying — only $16.85 delivered. Parts and plans for homemade brooders. Easy electrification of oil incubators. Burglar, fire and power-off alarms. Thermostats. *Free Catalog.* Write today. LYON RURAL ELECTRIC CO., Dept. EF, Greensboro, North Carolina, or San Diego, Calif.

POULTRY TIME SWITCHES pay for themselves in increased egg production. Five models from $3.95 to $18. All-electric or manually wound. With or without dimmer circuit. Write for information. AUTOMATIC ELECTRIC MANUFACTURING CO., Mankato, Minnesota.

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Scrap iron and steel are needed along with new iron for proper steel mixtures for munitions.

The shortage of tin, other metals and rubber needs little comment. Our enemies have captured the chief sources of supply of raw materials, or the demand is greater than production facilities at home.

Cooking fats provide glycerine for explosives.

The materials requirements for war are enormous.

But, your small supply of scrap materials added to that of 100 million others is also enormous—if it is turned in.

SELL your scrap. It is not unpatriotic to *sell* it. It must be segregated, sorted, accumulated in sufficient quantities for economical shipment in graded carload lots. Junk dealers are best able to do that. Or, your equipment dealer, garage man or butcher may have volunteered as a collection agent.

The government has frozen the prices of scrap materials. Junk dealers cannot profiteer by holding them.

If you wish to donate your scrap, give it to the 4-H Club, FFA, Scouts or other local farm or charitable organization.

Keep at home any pieces of old machines which you are likely to need for repairs for keeping required equipment in use.

"War Is Hell."
Losing It Would Keep Us There.

JULY LETTER CONTEST WINNERS

The July Contest was on the subject: "How Electricity Improves Products on Our Farm". The winning letters will be published in a later issue of the magazine. The winners were:

FIRST PRIZE—$20
James H. O'Kea, Box O, Plymouth, Ind.

SECOND PRIZE—$5.
Herman Gluck, Granton, Wis.

FIVE $3 PRIZES

John M. Meredith, Wallkill, N. Y.
J. H. Henson, Farmer, N. C.
Mrs. Robert C. Stiles, Quimby, Iowa.
Mrs. James Currans, Emmetsburg, Iowa.
Mrs. Charlotte Rasquin, R.D. 1, Walden, N. Y.

The following persons submitted letters which were not strictly on the subject of *Improved Products,* but are good enough for publication in ELECTRICITY ON THE FARM at a later date and have been sent checks of from $1 to $5:

Mrs. Fred A. Lindeman, R.R. 1, Michigan City, Ind.
Mrs. Maurice Buxton, R. 2, Molalla, Ore.
Lucile Bigelow, Woodstock, Vt.
Rita May Schatzle, Lebanon Pike, Sharonville, O.
Alice Lingis, R.R. 1, Crete, Ill.
Mrs. Ogan W. Runyan, R.F.D. 2, Fremont, O.

THERE IS NO CONTEST THIS MONTH,

INFORMATION

Service for the Reader

As a reader of ELECTRICITY ON THE FARM you are entitled to our information service free of cost. Here is how it works.

Whenever you are seeking information about any piece of equipment or material that you are planning to buy, first look through the advertisements in this issue. They are your best guide.

Then, if you do not find what you want, just use the blank below to tell us your problem and we will see that you get the information you want. That's all there is to it. Easy, simple, and it costs absolutely nothing.

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